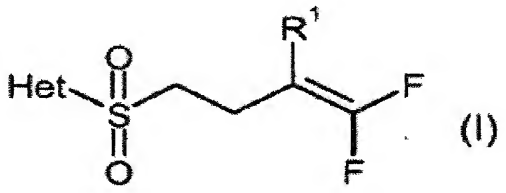
Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

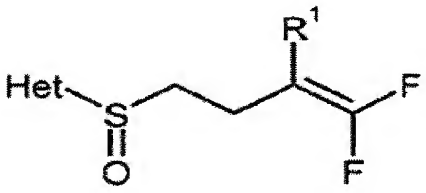
Claim 1-10. (Cancelled)

Claim 11 (Previously presented): A process for preparing heterocyclic fluoroalkenyl sulfone and sulfoxide compounds of formulas (I) and (II)



(I)

and

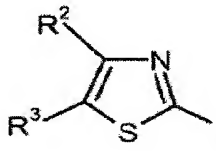


(II)

where

R^1 is hydrogen or fluorine, and

Het is a heterocycle selected from the group consisting of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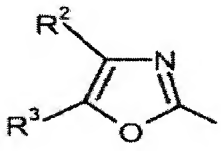
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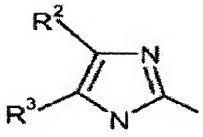
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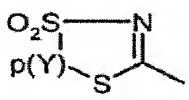
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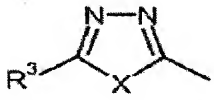
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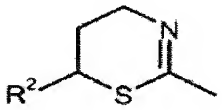
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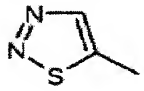
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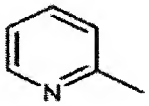
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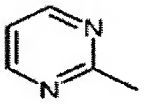
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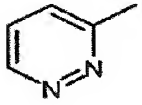
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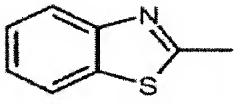
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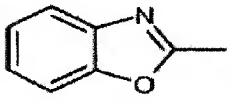
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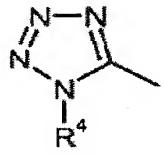

(N),

where

R^2 is hydrogen, halogen, C_1-C_2-alkyl, or C_1-C_4-haloalkyl,

R^3 is hydrogen or halogen; or is optionally halogen-, methyl-, ethyl-, n- or i-propyl-, n-, i-, s-, or t-butyl-, methoxy-, ethoxy-, n- or i-propoxy-, or n-, i-, S-, or t-butoxy-substituted C_1-C_4-alkyl, C_1-C_4-alkoxy, C_1-C_4-alkylthio, C_1-C_4-alkylsulfinyl, C_1-C_4-alkylsulfonyl, C_1-C_4-alkoxycarbonyl, C_1-C_4alkoxy-C_1-C_4-alkyl, C_1-C_4-alkylthio-C_1-C_4-alkyl, carboxyl, C_1-C_4-alkylaminocarbonyl, C_3-C_6-cycloalkylaminocarbonyl, C_1-C_4-dialkylaminocarbonyl, C_2-C_4-alkenyl, C_2-C_4-alkenylthio, C_2-C_4-alkenylsulfinyl, or C_2-C4-alkenylsulfonyl,

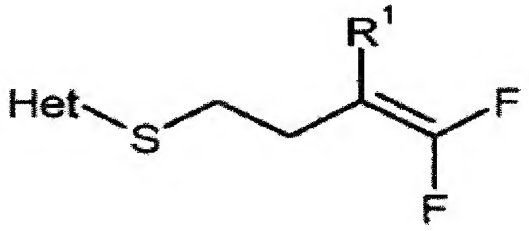
R is C_1-C_8-alkyl, C_2-C_6-alkenyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy-C_1-C_4-alkyl, C_1-C_4-alkylthio-C_1-C_4-alkyl, or C_3-C_8-cycloalkyl; or is optionally halogen-, C_1-C_4-alkyl-, C_1-C_4-alkoxy-, C_1-C_4-alkylthio-, or C_1-C_4-haloalkyl-substituted phenyl or benzyl,

p is 1, 2, or 3,

X is oxygen or sulfur, and

Y is methylene that is optionally singly or doubly, identically or differently, substituted with optionally halogen-, C_1-C_4-alkoxy-, C_1-C_4-alkylthio-, C_1-C_4-haloalkoxy-, or C_1-C_4-haloalkylthio-substituted C_1-C_4-alkyl, C_2-C_4-alkenyl, or C_2-C_4-alkynyl; or is phenyl that is optionally singly to triply, identically or differently, substituted with halogen, cyano, nitro, C_1-C_4-alkyl, C_1-C_4-alkoxy, C_1-C_4-alkylthio, C_1-C_4-haloalkyl, C_1-C_4 haloalkoxy, or C_1-C_4-haloalkylthio,

comprising allowing a compound of formula (III)



(III)

where R^1 and Het are each as defined for formula (I),

to react with a salt of peroxomonosulfuric acid (H_2SO_5),

optionally in the presence of a reaction assistant and optionally in the presence of a diluent, wherein the reaction of a compound of formula (II) to formula (I) is conducted at a pH of from 6 to 10.

Claim 12. (Cancelled)

Claim 13. (Cancelled)

Claim 14. (Previously Presented) A process for preparing compounds of formula (II) according to Claim 11 wherein a compound of formula (III) according to Claim 11 is allowed to react with a salt of peroxomonosulfuric acid (H_2SO_5), optionally in the presence of a reaction assistant and optionally in the presence of a diluent.

Claim 15. (Previously Presented) A process according to Claim 14 carried out at a pH of from 1 to 3.

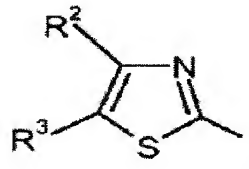
Claim 16. (Previously Presented) A process according to Claim 11 in which the salt of peroxomonosulfuric acid is potassium hydrogenperoxomonosulfate (2 $KHSO_5$ • KHS04 • K_2SO_4 (5:3:2:2)).

Claim 17. (Previously Presented) A process according to Claim 11 carried out at a temperature of from -20°C to 150°C.

Claim 18. (Previously Presented): A process according to Claim 11 in which

R^1 is fluorine,

Het is a heterocycle selected from the group consisting of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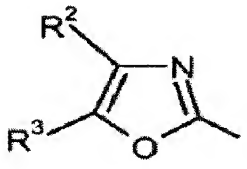
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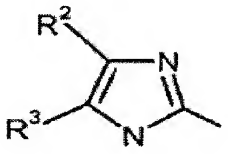
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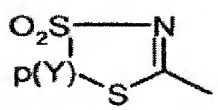
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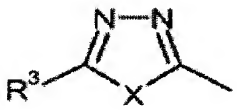
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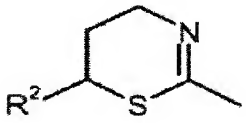
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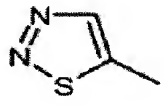
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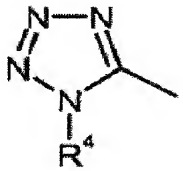

(N),

R^2 is hydrogen, fluorine, or chlorine,

R^3 is hydrogen, fluorine, or chlorine; or is optionally fluorine-, chlorine-, methyl-, ethyl-, n- or i-propyl-, n-, i-, S-, or t-butyl-, methoxy-, ethoxy-, n- or i-propoxy-, n-, i-, S-, or t-butoxy-substituted methyl, ethyl, n- or i-propyl, n-, i-, S-, or t-butyl, methoxy, ethoxy, n- or i-propoxy, n-, i-, S-, or t-butoxy, methylthio, ethylthio, nor i-propylthio, n-, i-, S-, or t-butylthio, methylsulfinyl, ethylsulfinyl, methylsulfonyl, ethylsulfonyl, methoxycarbonyl, ethoxycarbonyl, n- or i-propoxycarbonyl, n-, i-, S-, or

t-butoxycarbonyl, methoxymethyl, methoxyethyl, ethoxymethyl, ethoxyethyl, methylthiomethyl, methylthioethyl, ethylthiomethyl, ethylthioethyl, carboxyl, methylaminocarbonyl, ethylaminocarbonyl, n- or i-propylaminocarbonyl, cyclopropylaminocarbonyl, cyclobutylaminocarbonyl, cyclopentylaminocarbonyl, cyclohexylaminocarbonyl, dimethylaminocarbonyl, diethylaminocarbonyl, ethenyl, propenyl, or butenyl, R_4 is methyl, ethyl, n-propyl, isopropyl, n-butyl, isobutyl, tert-butyl, n-pentyl, cyclopropyl, cyclopentyl, cyclohexyl, 2-chloroethyl, 2,2,3,3,3-pentafluoropropyl, 2,2,2-trifluoroethyl, 3-bromopropyl, 2-methoxyethyl, 2-ethoxyethyl, 2-methylthioethyl, allyl, or 2-butenyl; or is optionally singly or doubly, identically or differently, fluorine-, chlorine-, bromine-, methyl-, ethyl-, isopropyl-, trifluoromethyl-, methoxy-, or methylthio-substituted phenyl or benzyl,

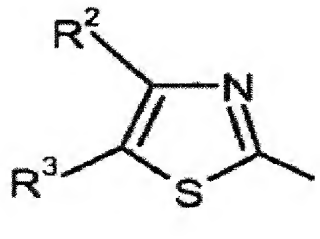
P is 1 or 2,

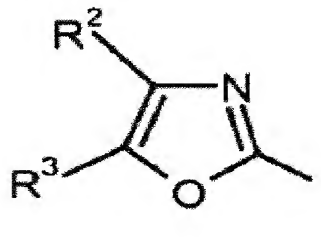
X is oxygen, and

Y is methylene that is optionally singly or doubly, identically or differently, substituted with methyl or ethyl; or is phenyl that is optionally singly to triply, identically or differently, substituted with fluorine,

chlorine, methyl, methoxy, trifluoromethyl, cyano, or nitro.

Claim 19 (Previously Presented): A process according to Claim 11 in which Het is a heterocycle selected from the group consisting of



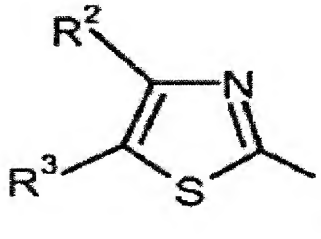
(A) and


(B),

R^2 is hydrogen, and

R^3 is hydrogen, fluorine, or chlorine.

Claim 20 (Previously Presented): A process according to Claim 11 in which



(A),

R^2 is hydrogen, and

R^3 is chlorine.